

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION**

KARL STORZ ENDOSCOPY-AMERICA INC.,)	
)	
)	
Plaintiff,)	
)	Civil Action No. 2:12-cv-02716-KOB
v.)	
)	
INTEGRATED MEDICAL SYSTEMS INTERNATIONAL, INC.,)	
)	
)	
Defendant.)	
)	

MEMORANDUM OPINION

This matter comes before the court on the parties’ proposed claim constructions regarding disputed terms in two United States patents. In its third amended complaint, Plaintiff Karl Storz Endoscopy-America Inc. (“KSEA”) alleges that Defendant Integrated Medical Systems International, Inc. (“IMS”) has infringed on U.S. Patent No. 7,530,945 (the ‘945 patent) and U.S. Reissued Patent No. RE47,044 (the ‘044 patent). (Doc. 93 at 8, 10). Defendant IMS not only denies wrongdoing, but also has filed a counterclaim alleging noninfringement and invalidity of the same two patents. (Doc. 94). The parties now ask the court to construe disputed claim terms in patents ‘945 and ‘044.

The court conducted a *Markman*¹ hearing on February 10, 2020 regarding patent claims in the two patents at issue. After consideration of the parties’ written and oral arguments regarding the disputed claims, the court has construed the term “transparent” and claims 15 and 23 of the ‘044 patent; however, the court finds construction of the other contested claims unnecessary.

I. Factual Background

The two patents at issue in this case concern endoscopes. The parties have agreed that an endoscope is “an instrument that can be at least partially inserted into a cavity to visually examine that cavity.” (Doc. 104 at 2). As described in the patents at issue here, endoscopes have a tubular shaft containing “a succession of different optical components”—including, for instance, lenses and spacers—that make up an optical system that allows the person operating the endoscope to obtain a visual image of the cavity into which the endoscope is inserted. (Doc. 93-1 at 7, 93-2 at 7).

To obtain good image quality, the interior components of the endoscope must be precisely aligned and fixed into position. For example, there must not be any gaps between the lenses and the spacers. Assuring correct alignment and image quality requires testing the position of the component parts and the overall performance of the optical system. In many endoscopes, like the prior art

¹ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996).

endoscopes distinguished by the patents in this case, this quality check cannot be made until after the complete assembly of the endoscope. When a quality check cannot be performed until after the endoscope is assembled, correction of any errors often becomes expensive because it requires the dismantling of the endoscope.

In the '945 patent (a method patent covering the assembly of endoscopes) and the '044 patent (a machine patent covering the endoscopes themselves), which are part of the same patent family and are substantially similar, Plaintiff KSEA lays claim to the process of creating an endoscope with an interior tube of transparent shrinkable material that encloses and fixes the optical components of the endoscope and also allows a visual check of the alignment of the interior components before assembly of the entire endoscope. Thus, the alignment of the optical components can be tested and corrected without disassembly of a completed endoscope.

II. Principles of Law

Claim construction is the process by which courts determine the scope and meaning of a patent's claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). "It is a bedrock principle of patent law that the claims of a patent define the invention to which the

patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*).

Proper claim construction requires a court to review the patent's intrinsic evidence and, when appropriate, extrinsic evidence. *See Id.* at 1317. Courts typically give the words of a claim their “ordinary and customary meaning” as understood by “a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312–13. In construing a term, courts consider the context of what was actually invented and what the inventor intended the patent claims to cover. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Patent claims carry a presumption of validity. 35 U.S.C. § 282. So, courts must construe claims to preserve their validity, absent clear and convincing evidence of invalidity. *Id.*; *Dana Corp. v. Am. Axle & Mfg., Inc.*, 279 F.3d 1372, 1376 (Fed. Cir. 2002).

“Claim construction begins with the language of the claims.” *Kaneka Corp. v. Xiamen Kingdomway Group Co.*, 790 F.3d 1298, 1304 (Fed. Cir. 2015) (*citing Phillips*, 415 F.3d at 1312–14). Thus, claim construction begins, and sometimes ends, with the consideration of intrinsic evidence—which consists of the patent claims themselves, the specification, and the patent’s prosecution history. *Phillips*, 415 F.3d at 1314–17. Claim terms must be reviewed in light of the intrinsic evidence because a “person of ordinary skill in the art is deemed to read the claim

term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313. Overall, the focus of claim construction “must begin and remain centered on the language of the claims themselves” because that is the language that the patentee chose to specifically lay claim to the invention. *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001).

Patent specifications, which are governed by 35 U.S.C § 112, contain “a written description of the invention, and of the manner and process of making and using it.” 35 U.S.C. § 112. The written description “must be clear and complete enough to enable those of ordinary skill in the art to make and use it.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Section 112 requires that a patent “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112. The Supreme Court has interpreted this provision to require that “a patent’s claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty.” *Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

The specification is “the single best guide to the meaning of a disputed term.” *Id.* For example, “the specification may reveal a special definition given to

a claim term by the patentee that differs from the meaning it would otherwise possess,” in which case “the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. Or, “the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor,” in which case “the inventor has dictated the correct claim scope, and the inventor’s intention, as expressed in the specification, is regarded as dispositive.” *Id.*

In addition to the specification, the court “should also consider the patent’s prosecution history, if it is in evidence,” when construing a patent claim. *Id.* at 1317 (quotation marks omitted). The prosecution history “consists of the complete record of the proceedings before the [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Id.* However, the Federal Circuit has cautioned that “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.*

Although it carries less weight than intrinsic evidence, the court also may rely on extrinsic evidence, which consists of “expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317 (quotation marks omitted). When “considered in the context of the intrinsic evidence,” extrinsic evidence “can help the court determine what a person of ordinary skill in the art

would understand claim terms to mean.” *Id.* at 1319. However, extrinsic evidence cannot be used where it contradicts the claim meaning as shown by the intrinsic evidence. *Id.* at 1324.

To the extent that a party argues that a claim is indefinite, that party must prove indefiniteness by clear and convincing evidence. *Sonix Tech. Co.*, 844 F.3d at 1377. While a patent claim must give “clear notice of what is claimed,” “the Supreme Court has recognized that ‘absolute precision is unattainable.’” *Id.* (quoting *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014)). The law requires only reasonable certainty in patents, according to their subject matter. *Id.*

Further, because of the limitations of language and the fact that no patent can attain absolute precision, the Federal Circuit has rejected the proposition that “claims involving terms of degree are inherently indefinite”; definiteness does not require “mathematical precision”—it merely requires the provision of sufficient certainty to a person of ordinary skill in the art when the claim is read in the context of the invention. *Id.* (quoting *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1384 (Fed. Cir. 2005)).

III. Discussion

With these basic legal principles of claim construction in mind, the court turns to the intrinsic evidence to determine first whether construction of the

challenged claim terms is required, and, if so, the proper interpretation of the claim. In making these decisions, the court remembers that the purpose of claim construction is to help the jury understand the claims of the patents at issue. Much of the language in the patents at issue falls far short of plain English, with all of its “sais” and awkwardly constructed lengthy sentences. Nevertheless, the court does not view the role of the court in claim construction to be rewriting the patent language, but ensuring that a jury can understand the essence of the patents’ claims.

A. Construction of “Transparent”

The parties spent most of their briefs and their presentations at the *Markman* hearing arguing over the meaning of “transparent” and related phrases concerning the “visual check” of the optical components after the transparent material has been shrunk around the components but before the transparent material containing the optical components has been inserted into the outer tube of the endoscope. So, the court begins the process of construction with the term “transparent.”

1. *Is “Transparent” Indefinite?*

IMS argues that “transparent” is indefinite and that the intrinsic evidence provides no method to determine whether the shrinkable material covered by the patent is “transparent,” as the term is used in the patents. (Doc. 96). More specifically, IMS argues that the term “transparent” is indefinite because it cannot

be distinguished from translucent, which the patents do not cover, and because it is an impermissible term of degree with no means for objective measurement. The court disagrees on both counts. While the term “transparent” does require construction in this case, its construction can be established from the evidence presented—specifically, from the language of the patents themselves.

a. Claim Language

Reading the two patents together in their entirety reveals the inescapable and undebatable purpose of the method patent (‘945) and the machine patent (‘044): to allow a visual check of the alignment of optical components before placement in the outer tube of the endoscope by using a shrinkable material that is transparent. The language of the claims themselves establishes that the word transparent is contextually and definitionally tied to its purpose of allowing a visual check through the sunken material. That relationship as established by the intrinsic evidence allows a person of ordinary skill in the art to understand the meaning of “transparent” within the context of the patents and, especially because of the operative presumption of validity, to avoid a finding of indefiniteness at this stage of the proceedings. *See* 35 U.S.C. § 28.

Claim construction begins with the claims, which define the scope of the patented invention. *Kaneka Corp.*, 790 F.3d at 1304; *Phillips*, 415 F.3d at 1312. The claim language of the ‘945 patent uses the term “transparent” and places it in a

context that establishes its meaning as it relates to the patent as a whole. The relevant claims of patent ‘945 set forth:

What is claimed is:

1. A method for assembling an endoscope having a tubular shaft, an optical system having several components, said components of said optical system are at least partially surrounded by a tube made of both a transparent and a shrunk material, said method comprising the following steps
 - (a) introducing said components into a tube of transparent and shrinkable material to form a unit,
 - (b) shrinking said shrinkable material of said tube for fixing the position of said components contained within said tube relative to one another,
 - (c) *checking a position* of said components relative to one another *through said transparent shrunk material*, of said shrunk tube and
 - (d) introducing said unit composed of said shrunk tube and said components therein into said tubular shaft.
2. The method of claim 1, wherein said unit composed of said components with said transparent shrinkable tube is, prior to shrinkage, introduced into a retaining device, said unit lying in an oriented position within said retaining device.

(Doc. 96-1 at 9, column 6, lines 20–42 (Patent ‘945)) (emphasis added). The claims continue, but the cited claims establish the meaning of transparent within the context of the patent.

The description in the claim of the specific steps of the patented method, which includes the use of shrunken transparent material and the performance of a visual check through the transparent material, creates the necessary inference that the transparent material allows visualization of the component parts for the described visual check. The entirety of claim one of the ‘945 patent shows that a

key element of the invention is being able to check the position of the optical components through the transparent shrunk material prior to insertion into the tubular shaft; thus, “transparent” must be read as allowing such a visual check.

The claims of patent ‘044 only reinforce this idea. Much of the language of the ‘044 patent is substantially similar, if not identical, to the language of the ‘945 patent, but it does contain a few extra provisions. Because the ‘044 patent is a machine patent, it contains additional claims describing the constructed endoscopes. Thus, patent ‘044 claims, for example:

1. An endoscope, comprising:
a tubular shaft, having an inside face,
an optical system having several components, said components of said optical system are contained in an interior of said tubular shaft,
said components comprising at least two of the following:
a lens, a spacer, a diaphragm, a prism and a filter, said components directly surrounded by a support piece made of shrunk material, wherein
said *shrunk material is a transparent material*,
said support piece made of said transparent material has the shape of a tube, and
said tube containing said components of said optical system has been shrunk prior to inserting said tube into said interior of said tubular shaft, *for allowing a visual check* of a position of said components relative to one another, and
a gap located between an outside surface of said tube of shrunk material and said inside face of said tubular shaft.
2. The endoscope of Claim 1, wherein said components are surrounded by a single tube made of said transparent material.

(Doc. 96-2 at 9, column 6, lines 28–50 (Patent ‘044)) (emphasis added).

The language of the '044 patent's first and second claim emphasizes both the importance of transparency to the invention and the fact that the transparent shrunk material allows for a visual check of the position of the optical components of the endoscopes. The language of the claims specifically states that the tube of transparent material has been shrunk "for allowing a visual check" of the relative position of the optical components. Further, the language regarding "transparent" and "visual check" tracks the language of the '945 patent and again creates a necessary implication that someone assembling the endoscope must be able to see through the shrunk material well enough to allow a visual analysis of the alignment of the optical components.

b. Specification

The rest of the language of the patents supports the definition of "transparent" provided by the claims. The abstracts for both the '945 patent and the '044 patent illustrate the integral nature of "transparent" in achieving the invention that KSEA sought to patent. The abstracts state that, for the proposed invention, the optical components will be "surrounded by a transparent and tube-sleeve-shaped shrunk material which has been shrunk before the components are introduced into the tubular shaft." (Doc. 96-1 at 2 (Patent '945); doc. 96-2 at 2 (Patent '044)). This inclusion of the term transparent in the abstracts suggests its

relative importance to the patents at issue and to the innovation that the patents seek to protect.

The specification of the ‘945 patent further demonstrates that transparency is essential to achieving the purpose of the invention. In the ‘945 patent, the specification states that the “object in respect of an endoscope is achieved by the fact that the components are surrounded by a transparent and tube-shaped shrunk material which has been shrunk before the components are introduced into the tubular shaft.” (Doc. 96-1 at 7, column 1, lines 61–65 (Patent ‘945)). Like the statement in the abstract, this statement in the specification announces that the fact that the material of the shrinkable tube is transparent provides the key to achieving the object of the invention.

The specification also lists discrete steps for achieving the invention: “introducing the components into a transparent and tube-shaped shrinkable material to form a unit, shrinking the material to fix the position of the components relative to one another, checking the position of the components relative to one another through the transparent shrunk material,” and introducing the tube of shrunk material containing the components into the tubular shaft. (*Id.*, column 1, line 67; column 2, lines 1–7 (Patent ‘945)). Thus, the specification, like the claims, indicates that the ability to see through the tube, as allowed by the use of transparent material, is integral to the invention because it allows for someone

assembling the endoscope to visually look at the position of the optical components in relation to each other to ensure their proper alignment.

The specification of the '945 patent further emphasizes that the transparency of the tube, and the resulting ability to check the alignment of the optical components, constitutes a large portion of the innovation that forms the basis of the patent. The specification states that “[w]ith the present invention, it is now possible to produce a unit composed of the optical components and the tube outside the endoscope and *to check this unit visually. For this purpose, a transparent shrinkable material is used* which in many respects affords advantage over the opaque materials known from prior art” because “the position of the components relative to one another can be visually checked at the time the individual components are introduced into the material before it has been shrunk.” (*Id.*, column 2, lines 26–34 (Patent '945) (emphasis added)). The specification goes on to say that, after the unit containing the optical components has been shrunk, “a check can once again be made, namely as to whether the shrinkage has caused any relative changes to take place.” (*Id.*, lines 42–45).

This part of the specification renders explicit the implications of the claims themselves. It clearly states that transparent shrinkable material is used for the explicitly stated purpose of allowing someone to visually check the alignment of the components before complete assembly of the endoscope. The specification

language indicates that “transparent” is defined largely by its relationship to the objective of the invention: the ability to perform a visual alignment check.

Distinguishing the opaque materials in prior art also highlights the fact that the ability to see through the material and perform the visual check is essential to the patented invention.

The specification of the ‘945 patent goes even further in emphasizing the purpose of both the invention and the transparent tube; it states that “[b]y provision of the transparent material, it is now possible for the first time to perform a visual check even after the shrinking process [... and] Thus, such a preliminary check can be made even before the optical system is fitted in the shaft.” (*Id.*, lines 46–51).

The specification reiterates this point in a section entitled “Detailed Description of Preferred Embodiment,” stating that “[*b*]y virtue of the transparency of the material it is possible to check the desired correct fit of these components relative to one another from the outside, for example to check whether the opposing end faces of the two rod lenses bear exactly on the spacer.” (*Id.* at 8, column 4, lines 45–49 (emphasis added) (references to illustration omitted)).

The specification continues to accentuate this point, explaining that “[b]y virtue of the transparency of the material which is still present even after the shrinkage, it is possible once again to check, from the outside, the correct fit of the individual components relative to one another.” (*Id.* at 9, column 5, lines 16–19

(Patent ‘945)). Throughout the specification, the term transparent is tied to its purpose of allowing a visual check, which in turn allows assessment of the component parts before the assembly of the entire endoscope. Thus, the purpose of the invention can only be achieved and the patent can only be consistent if the shrinkable transparent material allows for a visual check of the component parts and their positions.

The language of the ‘044 patent’s specification is largely identical to that of the ‘945 patent and contains much of the same relevant language regarding transparency. (*See generally* doc. 96-2). However, the ‘044 patent does contain a few extra provisions. In the specification, the ‘044 patent explicitly states that “[i]t is an object of the present invention is [sic] to further optimize an endoscope and a method for assembling components in such a way that, by using shrinkable materials, it is possible to fix the optical components relative to one another in a way which can also be checked.” (Doc. 96-2 at 7, column 2, lines 3–7 (Patent ‘044)). As with the rest of the language of the patents, this clear statement of purpose indicates that one of the primary goals of the patented endoscope is to allow a visual check of the position of the optical components of an endoscope through the tube of shrinkable material prior to complete assembly.

c. Prosecution History

The final piece of intrinsic evidence in this case, the prosecution history, also provides some information to help understand the meaning of “transparent” to a person of ordinary skill in the art. As part of an *inter partes* reexamination of the patent that is now the ‘044 patent, the PTO found that KSEA could patent an endoscope using transparent shrunken material that allowed for a visual check, but that the patent did not extend to an endoscope using “translucent” shrunken material. (Doc. 96-7 at 5). During the appeals process of the *inter partes* reexamination, the PTO Appeal Board addressed the issue of the non-inclusion of “translucent” in the context of what is now the ‘044 patent. Specifically, the Appeal Board considered whether proposed patent claims that included “translucent” could receive the benefit of earlier filings, including the ‘945 patent, that only mentioned “transparent.” (Doc. 96-8 at 6).

The Appeal Board determined that the ‘945 patent did not contain a written description of translucent material, so the proposed claims involving translucence could not receive the benefit of the filing date of the ‘945 patent. (*Id.* at 11). In reaching that decision, the Appeal Board noted the contrasting plain meanings of “transparent” and “translucent.” Specifically, the Appeal Board stated that the plain meaning of “transparent” was “having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly,” while

the plain meaning of “translucent” was “permitting the passage of light; *especially*: transmitting and diffusing light so that objects beyond *cannot be seen clearly*.” (*Id.* at 8–9, emphasis in original). Accordingly, the Appeal Board determined that translucent was not the same as transparent within the context of the patents and that a person of ordinary skill in the art would not read the ’945 patent to cover translucent materials. The Appeal Board’s reliance on the understood difference between transparent and translucent—namely, the clarity of the image on the other side of the material—reinforces the patent language’s implication that a transparent material is one that allows a clear enough visualization of component parts to allow a visual check of their position.

d. Analysis

IMS argues that this court should find that transparent is indefinite because translucent materials, which the patents do not cover, would also allow a visual check. (Doc. 96). Even considering the fact that the patents do not include “translucent,” the court finds that “transparent” is not indefinite.

IMS’s argument regarding translucence simply cannot overcome the intrinsic evidence in this case. The prosecution history—the least significant piece of the intrinsic evidence puzzle—is the only part of the intrinsic evidence that addresses the issue of “translucent” as compared to “transparent.” While the prosecution history does show that the PTO found that the patents do not

encompass “translucent” materials, it is equally evident that the PTO viewed transparent and translucent as distinct and distinguishable concepts. In fact, the PTO focused on the fact that translucent material diffuses light so that it prevents a clear visual of the objects on the other side of the material. Under that definition, translucence has no relevance to the patents at issue because a translucent material would not allow a clear enough view for a visual check of the component parts. The PTO’s definition notwithstanding, “translucent” does not create the same unequivocal implication of visibility that “transparent” does. Therefore, the simple fact that the patents do not cover “translucent” material does not detract from the fact that the patents effectively define “transparent” as allowing for the visual check contemplated by the patented innovation.

IMS also argues that “transparent” is indefinite because it is an impermissible term of degree, as it contains no objective, quantifiable measurement for visibility. The Federal Circuit has held that terms of degree are not inherently indefinite and that nothing requires absolute mathematical precision in patent language; rather, a patent term is definite if it provides sufficient certainty to a person of ordinary skill in the art. *Sonix Tech. Co.*, 844 F.3d at 1377. Terms that fail to provide guidance as to the scope of the claims are indefinite, for instance, purely subjective terms like “aesthetically pleasing” that depend on

subjective opinion. *Id.* By contrast, “transparent” as used in the ‘945 and ‘044 patents is not purely subjective.

The Federal Circuit has stated that whether something “involves what can be seen by the normal human eye” can provide an objective baseline for claim interpretation that removes the claim from the realm of pure subjectivity. *Id.* at 1378; *see also Liqwd, Inc. v. L'Oreal USA, Inc.*, 720 F. App'x 623, 631 (Fed. Cir. 2018) (holding that patent claims requiring “visible inspection” with the human eye of the effect of hair dye on hair were not indefinite because “persons of ordinary skill in the art of hair-care products know how to use visual inspection to determine with reasonable certainty whether a certain ingredient in a product would actually alter the color of hair”). In this case, “transparent” is more akin to “visually negligible,” a concept that the *Sonix* court found not to be indefinite, than to something purely subjective like “aesthetically pleasing.” *See Sonix Tech. Co.*, 844 F.3d at 1378.

Transparent within the context of the patents in this case requires the ability to visually check the alignment of the component parts through the shrinkable material. The issue in determining transparence, therefore, is almost the same as the issue in determining “visually negligible” in *Sonix*: can the human eye see the component parts clearly enough through the transparent material to check their alignment. Although this test is performed by the human eye, the necessity of

being able to check the alignment of the parts provides an “objective baseline” for the human eye’s determination of what constitutes transparent; the issue of the transparency of the shrunk material in the patents depends on human perception, but it does not depend on the “vagaries of any one person’s opinion.” *Id.* at 1377 (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005), *abrogated by Nautilus, Inc.*, 572 U.S. 898). Accordingly, the court finds that the term “transparent” is not an indefinite term of degree.

In summation, the intrinsic evidence shows that “transparent” is not indefinite at all. The court finds that the intrinsic evidence overwhelmingly demonstrates that the purpose of the patents is to protect the innovation allowing for an endoscope assembler to check the alignment of optical components in a tube *before* the endoscope is fully assembled. That innovation is achieved by using transparent material that allows for the visual check of the component parts. The importance of the transparency of the material to the achievement of the invention is characterized not only by its continued use in conjunction with the visual check language, but also by the sheer frequency of the use of the term. Reading the patents as a whole in light of their purpose, a person of ordinary skill in the art would understand that the term “transparent” is used so frequently because transparency is essential to allowing the innovative visual check of the component parts, and such a person would be able to understand that “transparent” means the

ability to perform the visual check. Therefore, IMS's indefiniteness argument fails.

2. *Definition of Transparent*

The parties each propose different constructions for "transparent." IMS argues that "transparent" should be defined as "not visible." (Doc. 104 at 2). KSEA argues that "transparent" should mean "having the property of transmitting an amount of light that is more than sufficient to permit a visual check therethrough." (*Id.*).

While the court finds that the intrinsic evidence provides a thorough understanding of the definition of transparent and its definite nature, expert testimony from Albert Juergens at the *Markman* hearing provided helpful scientific background for the court to consider when choosing a correct construction of the term "transparent." *See Markman*, 517 U.S. at 388. Discussing the way that light travels through materials, Mr. Juergens clarified that no material, including so-called "clear glass," is completely invisible to the eye or allows for complete light transmission. Mr. Juergens also testified regarding how a person of ordinary skill in the art would perform a "visual check" of the component parts in this case by placing the tube containing the optical components in front of a light source. The person performing the visual check would then assess the alignment of the

component parts by looking for bright spots that would indicate improper alignment of the parts.

Relying on the intrinsic evidence and in part on the expert testimony of Mr. Juergens, the court finds IMS's construction of "transparent" overly narrow and inaccurate. A material need not be invisible or imperceptible to the human eye to be transparent, especially because perfect transmission of light is impossible.

However, the court also is not convinced of the accuracy or clarity of KSEA's proposed construction: "having the property of transmitting an amount of light that is more than sufficient to permit a visual check therethrough." (Doc. 104 at 2). The court finds the use of "more sufficient" in KSEA's proposed construction confusing and lacking in clarity. Thus, instead of adopting either of the proposed definitions, the court puts forth its own.

Based on the intrinsic evidence and especially on the language of the patent claims themselves, the court construes "transparent" to mean "allowing the transmission of light such that the assembler of an endoscope can visually check the alignment of the component parts of the endoscope."

B. Construction of Claims 15 and 23 of Patent '044

In addition to arguing that "transparent" is indefinite, IMS also argues that claims 15 and 23 of the '044 patent are indefinite. Claim 15 states "material of the tube permits a visual check of a position of said components relative to one another

through the material of the tube;” and Claim 23 states “shrunk material permits visual inspection of said plurality of components relative to each other through the shrunk material prior to insertion into said interior of said tubular shaft.” (Doc. 104 at 3).

To support its argument, IMS asserts that the claims do not show “what constitutes a ‘visual check’ of the components,” describe what level of detail must be visible, or state how the check must be performed. (Doc. 96 at 24). IMS further argues that, if the court finds that the claims are not indefinite, the claims should be construed as meaning “material of the tube is transparent,” and “shrunk material is transparent,” respectively. KSEA, on the other hand, argues that the claims should be construed to mean that the material allows a “sufficient amount” of light to pass through it to perform a visual inspection, a definition that it argues is broader than “transparent,” as required by the doctrine of claim differentiation. (Doc. 97 at 17–18).

1. Are the Claims Indefinite?

The court finds that the claims are not indefinite because, like transparent, the terms “visual check” and “visual inspection” take their meaning from the context of the patent and a person of ordinary skill in the art would understand the functional parameters of the requirement. Mr. Juergens’ testimony shows that a person in the field would understand the necessity of having a light source to look

through the material to assess the alignment of the component parts. The other aspects of a visual check or inspection are intuitive based on the claims—an endoscope assembler must be able to look through the material and perform an assessment of the alignment of the component parts. Accordingly, the terms visual check and visual inspection, which appear to form the foundation of IMS’s indefiniteness argument, provide sufficient certainty regarding the scope of the claims to allow a person of ordinary skill in the art to understand what was being patented. *See Sonix Tech. Co.*, 844 F.3d at 1377. Thus, the court finds that the claims are not indefinite.

2. Definitions of the Claims

The court is not convinced by either of the parties’ proposed constructions of claims 15 and 23. The court finds that IMS’s proposed construction conflates different claims by seeking to relocate the term “transparent” into a claim that does not use that term, in contravention of the principle of claim differentiation. The doctrine of claim differentiation creates a presumption “that different words used in different claims result in a difference in meaning and scope for each of the claims.” *Clearstream Wastewater Sys., Inc. v. Hydro-Action, Inc.*, 206 F.3d 1440, 1446 (Fed. Cir. 2000). So, the claims the parties seek to construe, while inextricably related to “transparent,” should not carry the exact same meaning when located in a different claim.

However, the court also finds KSEA's proposed definition problematic. The doctrine of claim differentiation cannot be used to broaden a claim beyond what is indicated in the patent, but "prevents the narrowing of broad claims by reading into them the limitations of narrower claims." *Id.* KSEA's proposed construction, with its description of "sufficient" light, not only has the potential to create confusion, it also has the potential to broaden the claim beyond what is intended by the patent.

Based on the intrinsic language of the patents and keeping the doctrine of claim differentiation in mind, the court instead construes claim 15 of patent '044 to mean "the material of the tube allows the transmission of light such that the assembler of an endoscope can observe the position of relevant component optical parts within the tube;" and claim 23 of the '044 patent to mean "the shrunk material of the tube allows the transmission of light such that the assembler of an endoscope can observe the position of relevant component optical parts within the tube prior to insertion into the tubular shaft."

C. Claims Not Requiring Construction

The parties also seek construction of the term "gap" as it is used in multiple claims. (Doc. 104 at 4). In context, the term gap refers to a space between the outside face of the transparent shrunken tube and the inside face of the tubular shaft. The court finds that the term "gap" needs no construction in this case because the ordinary meaning of the term is readily apparent even to a lay person.

See Phillips, 415 F.3d at 1314. The claims, and the use of the term gap, simply reflect that the shrunken tube must be small enough to be inserted into the tubular shaft, which necessarily results in some amount of space between the inner and outer tubes. Accordingly, the term “gap” and the claims using the term “gap” need no construction by the court.

Finally, IMS seeks construction of various claims describing the particular series of steps in the endoscope manufacturing process, arguing that the claims should be reworded for clarity’s sake to make it easier for the jury to understand the order in which the steps of the process occur. (Doc. 96 at 28–30). KSEA asserts that no construction is necessary, as IMS merely shuffles the claims around and adds new words. (Doc. 97 at 28). The court is inclined to agree with KSEA. The court finds that the “ordinary and customary meaning” of the claims is plain from their face. *See Phillips*, 415 F.3d at 1312. Therefore, as stated on the record during the *Markman* hearing, the court declines to construe these claims.

IV. CONCLUSION

The court orders that the disputed claims discussed above be construed as set forth in this Memorandum Opinion. The court will issue a separate Order consistent with this Opinion.

DONE and **ORDERED** this 12th day of March, 2020.

A handwritten signature in cursive script, reading "Karon O. Bowdre". The signature is written in black ink and is positioned above a horizontal line.

HON. KARON O. BOWDRE
UNITED STATES DISTRICT JUDGE